INSTITUTE AND FACULTY OF ACTUARIES

EXAMINATION

16 April 2024 (am)

Subject SA1 – Health Care
Specialist Advanced

Time allowed: Three hours and twenty minutes

In addition to this paper you should have available the 2002 edition of the Formulae and Tables and your own electronic calculator.

If you encounter any issues during the examination please contact the Assessment Team on T. 0044 (0) 1865 268 873.

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1 XYZ Health is a health and care insurance company operating in Country B. Country B has a large mature health and care insurance market. XYZ Health has been selling individual income protection business via financial advisors for many years.

XYZ Health's current approach for underwriting new income protection business is to collect detailed information about the applicant's health, family history, occupation and lifestyle via a telephone interview with the applicant. This information is then assessed by a human underwriter, who may ask for more information about the applicant from their doctor and, where appropriate, may require the applicant to have a further medical examination. XYZ Health will then either accept the applicant on ordinary rates, adjust the premium paid by the applicant or decline the case.

(i) Assess the suitability of this underwriting approach for income protection business. [5]

(ii) Discuss the advantages and disadvantages of this underwriting approach from the perspective of XYZ Health's customers. [5]

XYZ Health has been approached by a specialist underwriting company (AutoUW). AutoUW has developed an automated underwriting system that uses machine learning and artificial intelligence algorithms to underwrite individual risks. AutoUW will use a range of different data sources in the underwriting process. AutoUW has said that all underwriting decisions are taken in seconds and its automated underwriting system does not require any human intervention once it is operational. AutoUW has stated that their system has been successfully implemented by health and care insurance companies in other countries.

AutoUW has stated that by introducing its automated underwriting system for income protection business, XYZ Health would significantly improve the speed and consistency of XYZ Health's underwriting. The reduction in human processing would also reduce XYZ Health's underwriting costs.

XYZ Health's board has asked for further information about AutoUW's automated underwriting system.

(iii) Outline the additional information that should be obtained about AutoUW's automated underwriting system. [10]

The board of XYZ Health also want to understand the possible impact on XYZ Health's business of implementing AutoUW's underwriting system for income protection business.

(iv) Discuss the possible impact on XYZ Health's business of implementing AutoUW's underwriting system for income protection business. [15]

XYZ Health has had an initial discussion with its financial regulator about introducing an automated underwriting system. The financial regulator has expressed some initial concerns about the potential impact of the automated underwriting system on the consumer.

(v) Suggest possible concerns the financial regulator may have with AutoUW's underwriting system. [5]

(vi) Set out the actions XYZ Health could take to address the concerns identified in part (v). [5]

[Total 45]

2 Country A is a developing country with independent public and private health care systems.

The public health care system in Country A is funded through general taxation and services are provided to citizens of Country A for free. Health care services are provided via local clinics and large regional hospitals, which are both staffed by nurses and doctors. The quality of care provided by the public health care system is low and waiting times for care are long.

In addition, there are a range of private doctors and hospitals that provide a high standard of care but require either upfront payment from the patient for treatment or confirmation that private medical insurance will cover the cost of treatment prior to the treatment being provided.

The government of Country A has published a proposal for one social insurance scheme to replace the existing private and public health care systems. The administration of the scheme will be centrally managed by the government. The social insurance scheme will purchase care from health care providers registered with the fund. Private medical insurance would no longer cover any benefits provided for under the social insurance scheme.

(i) Comment on the proposal from the perspective of:

(a) the government.

(b) the medical insurance industry.

(c) a medical practitioner.

(d) citizens of country A.

[20]

(ii) Discuss how the proposed social insurance scheme could be financed. [4]

The government is considering two revenue collection mechanisms for the proposed fund. The first is a mandatory payroll deduction and the second is an increase in the rate of tax applied to goods and services (sales tax).

(iii) Compare the advantages and disadvantages of these two options. [6]

[Total 30]

3 Company Y is a health and care insurance company that has recently entered into a distribution agreement with a large grocery chain. The grocery chain has stores located throughout Country C.

The distribution agreement has the following key principles:

- Company Y will sell its insurance products directly to consumers through the grocery chain's stores.
- Products sold via the partnership will carry the branding of both the grocery chain and Company Y.

The marketing director of Company Y has proposed that the company offers a free insurance product to the grocery chain's customers as a way of creating awareness that Company Y will be selling its insurance products through the grocery chain's stores. The proposed free product will be a health cash product valid for a 6 month term and will be offered to customers who spend a minimum amount of money at the grocery store. The product will be offered to the grocery chain's customers for a limited promotional period.

(i) Discuss the factors that need to be considered by Company Y when designing the new free hospital cash product. [11]

(ii) Suggest possible concerns the insurance regulator may have with the launch of the proposed free product. [4]

(iii) Suggest product or campaign design features that can be used to reduce the insurance regulator's concerns. [4]

Company Y has also been considering an advertising campaign as an alternative way of increasing awareness of the distribution agreement with the grocery chain and to increase new business volumes from this agreement. The advertising campaign would include advertising via television, radio and social media. In addition, in-store marketing via flyers and posters will also be used.

(iv) Discuss the relative advantages or disadvantages for Company Y of an advertising campaign compared to offering a free product to customers of the grocery chain. [6]

[Total 25]

END OF PAPER